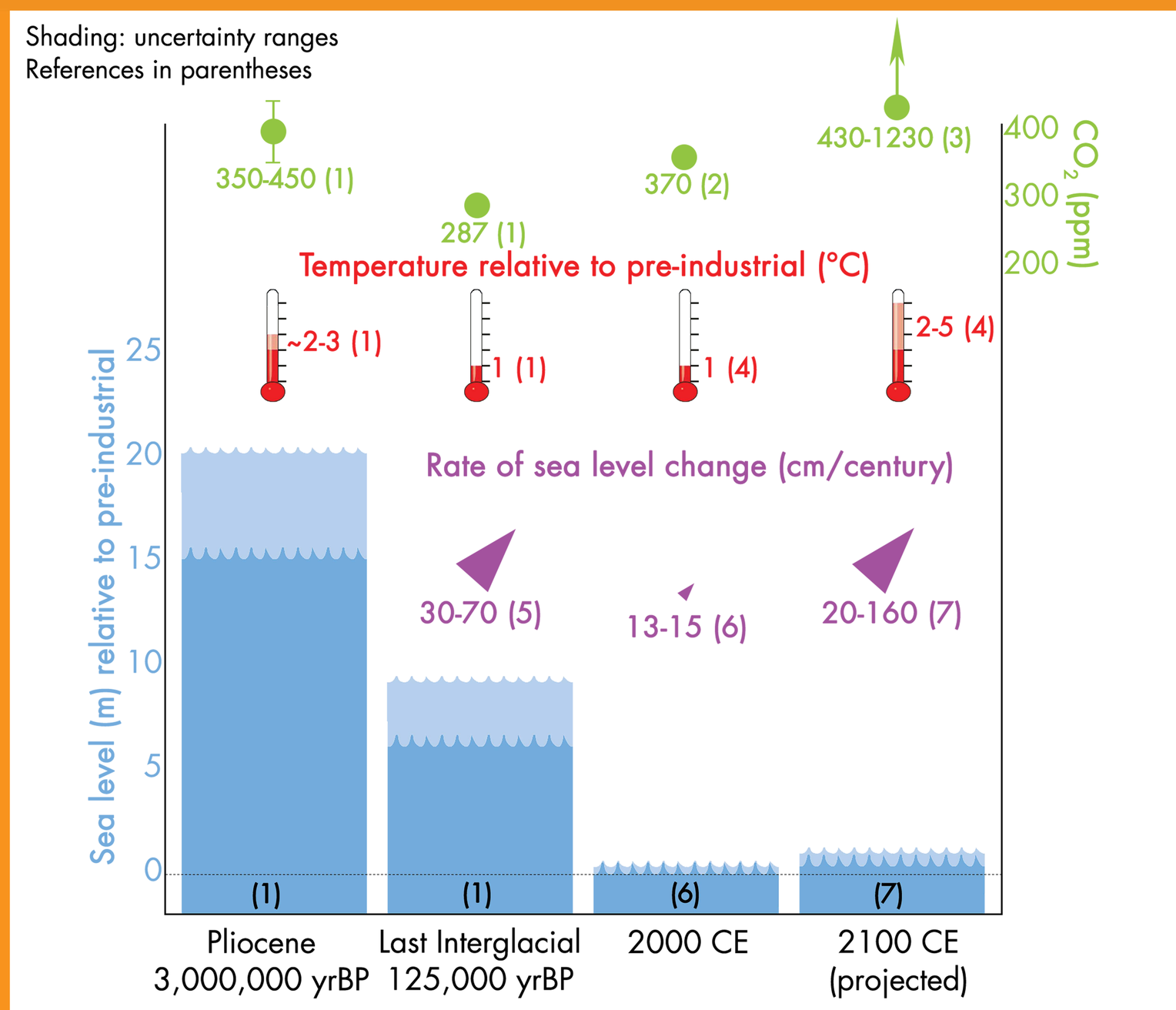
Future sea-level change: Lessons from the past

PAGES PALSEA

What impact will a warming climate have on future sea level? Studying the Earth during past warm periods can shed light on what we might expect in the future.



Sea level, temperature, and atmospheric CO_2 during warm periods of the past

The Pliocene (3,000,000 years before present) and the Last Interglacial period (125,000 years before present) are two of the most well-studied past periods warmer than today and thus could be used as possible analogues for future sea-level change. Depending on future CO_2 emissions, the atmosphere may warm significantly by the end of this century. While sea level is not expected to rise immediately to the level of the highstand during the Pliocene or the Last Interglacial, the rate of increase in 2100 CE is expected to be much larger than today. This could have important implications for sea level beyond 2100 CE.

Past Global Changes (PAGES) facilitates activities that address past changes in the Earth system in a quantitative way, to improve predictions of future climate and environment and inform strategies for sustainability. PAGES is a partner of the World Climate Research Programme.

Paleo constraints on sea-level rise (PALSEA)

The greatest uncertainty in future sea-level rise is the response of Earth's remaining ice sheets. The geologic record provides archives of how ice sheets and sea level responded to past climate warming. The PAGES working group PALSEA provides constraints on past sea-level rise and ice-sheet change to improve our understanding of future sea-level rise.

pastglobalchanges.org/palsea

References

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